OBJECTIVES: Implantable cardioverter defibrillator (ICD) is considered a lifelong therapy for the prevention of sudden cardiac death. However, it is still unresolved if patients who never experienced an appropriate ICD intervention during first generator longevity really need to undergo device replacement. **METHODS:** In a single-center prospective observational cohort study we examined the time-dependence of first appropriate ICD therapy for ventricular arrhythmias in patients who underwent ICD implantation for primary prevention. Primary prevention ICD patients were enrolled at the time of their first implantation and were evaluated thereafter for the first occurrence of appropriate ICD therapy for ventricular arrhythmias. **RESULTS:** Of 623 ICD recipients, 126 (20,2%) had appropriate ICD therapy. Incidence of first appropriate ICD therapy was 8.2% in the first year post-implant, increased to 13.7% in year 2, while in year 5 it was 28.3% (fig 1). Notably 39 patients received their first appropriate therapy after device replacement. No predictive factors for lower need of ICD therapy could be identified in patients without prior appropriate ICD intervention. **CONCLUSIONS:** In a primary prevention population the risk of first appropriate ICD therapy persists over long lifetime and necessitates continuing device therapy irrespective of shock-free intervals.

PMD8

CAN SEROLOGIC MARKERS OF FIBROSIS PREDICT FUTURE SHOCKS IN ICD RECIPIENTS WITH DILATED CARDIOMYOPATHY?

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OBJECTIVES: We investigated prospectively whether serum markers of collagen turnover could be used as predictors for the occurrence of malignant ventricular arrhythmias in patients with non-ischemic dilated cardiomyopathy (NIDC) implanted with an implantable cardioverter defibrillator (ICD) for primary prevention. Extracellular matrix (ECM) alterations in NIDC may provide electrical heterogeneity, thus potentially contributing to the occurrence of ventricular arrhythmia and subsequent SCD. **METHODS:** Serum C-terminal propeptide of collagen type-I (CICP), C-terminal telopeptide of collagen type-I (CITP), matrix metalloproteinase (MMP)-1, and tissue inhibitor of matrix metalloproteinases (TIMP)-1 were measured as markers of collagen synthesis and degradation in 70 patients with mildly to moderate symptomatic heart failure due to NIDC with LVEF <35%, who received an ICD for primary prevention of SCD. Patients were evaluated for any appropriate ICD delivered therapy, whether shock or antitachycardia pacing, during a 1-year follow-up period. **RESULTS:** Appropriate device therapies were delivered in 14 of the 70 patients during the follow-up period, with antitachycardia pacing in 2, antitachycardia pacing with shocks in 4, and shocks in 8. Preimplantation MMP-1 levels were significantly higher in patients who had appropriate ICD-delivered therapy than in those who did not have any therapy (27.7±1.6 ng/ml vs. 24.1±2.5 ng/ml, respectively, $p<0.001$). The same was true for baseline serum concentrations of TIMP-1 and CITP (89±14 ng/ml vs. 58±18 ng/ml, $p=0.008$ and 0.46±0.19 ng/ml vs. 0.19±0.07 ng/ml, $p<0.001$, respectively). **CONCLUSIONS:** Undoubtedly, ECM alterations play a crucial role in the constitution of an arrhythmogenic substrate in NIDC and, given the availability of therapies to prevent fatal ventricular tachyarrhythmias, the quest for factors that have a very good correlation with appropriate ICD discharges in these patients is logical. Our results confirm the role of serum markers of collagen turnover as predictors of arrhythmic events in ICD recipients and could provide an auxiliary tool in this context.

PMD9

LONG TERM FOLLOW UP OF PRIMARY AND SECONDARY PREVENTION IMPLANTABLE CARDIOVERTER DEFIBRILLATOR PATIENTS: "REAL-WORLD" DATA FROM THE ISLAND OF CRETE

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OBJECTIVES: The beneficial effects of implantable cardioverter defibrillators (ICDs) in primary and secondary prevention patients are well established. However, relative scarcity of data exists regarding long-term follow-up outcomes of this population in the context of tertiary hospitals-ICD implantation centres beyond randomized clinical trials borders. The aim of the study was to exhibit "real-world" data and possible differences on mortality and ICD therapies between secondary and primary prevention ICD recipients. **METHODS:** All patients treated with an ICD, regardless of the underlying cardiac pathology, at the island of Crete were included in the current analysis. The study population was grouped by the type of prevention (secondary or primary) for sudden cardiac death. The primary endpoint was all-cause mortality. The secondary endpoint was the occurrence of device therapy (appropriate or inappropriate). **RESULTS:** A total of 854 (88.6% men) ICD recipients were included. Of these, 623 (73%) patients received an ICD for primary prevention of sudden cardiac death and 231 (27%) patients for secondary prevention. During a mean follow-up of 12,4 +/-7,8 years, 177 (20.7%) patients died. The incidence of mortality was 35,5% for secondary prevention patients and 15.2% for primary prevention patients ($p<0.001$). Ventricular arrhythmia triggered appropriate therapy in 91 (39,4%) secondary prevention patients. Accordingly the number of primary prevention patients that received appropriate therapy was 126 (20,2%). A comparable risk for inappropriate shocks was observed. **CONCLUSIONS:** During long-term follow-up, primary prevention patients exhibited a lower risk for all-cause mortality. Both groups showed similar occurrence of inappropriate shocks but secondary prevention patients showed a higher rate of appropriate therapy.

PMD10

PHARMACOEPIDEMIOLOGY OF CELLULAR/TISSUE DERIVED PRODUCTS FOR THE TREATMENT OF DIABETIC FOOT ULCERS IN OUTPATIENT CARE SETTINGS

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OBJECTIVES: Identify patient and clinical characteristics in the diabetic foot ulcer (DFU) population and examine patterns of cellular/tissue derived product (CTP) utilization. **METHODS:** Retrospective, de-identified electronic medical records from 2007-2013 were extracted from the Intellicure Limited Data Set (I-LDS). The I-LDS extracts records from 96 hospital-based outpatient wound centers. Patient, wound and encounter level characteristics were examined. CTPs of interest included extracellular matrix (ECM), human skin equivalent (HSE), and living skin equivalent (LSE). **RESULTS:** A total of 10,359 patients, 21,677 wounds, and 222,861 encounters for DFU were identified. The majority of patients was male (60.9%), Caucasian (63.5%), and reported Medicare as their primary insurance (51.1%). The average age was 63.9 (SD=13.5) and the average number of physician visits was 17.4 (SD=20.8). The mean wound surface area was 5.6 cm2 (SD=27.3). The overall average wound age was 7.0 months (SD=16.26). Of the 21,677 wounds, approximately 8.6% received ECM (2.6%), HSE (2.6%), or LSE (3.4%). The average number of applications for ECM was 2.7 (SD=2.5), 2.0 (SD=1.7) for HSE, and 4.0 (SD=2.9) for LSE. Wounds treated with CTPs were, on average, several months older relative to the overall DFU population: 16.0, 16.4, and 14.7 months for ECM, HSE, and LSE, respectively. Overall average wound treatment time was 3.4 months (SD=8.4). However, treatment time was substantially longer with CTP utilization with an average time of 9.1, 9.3, and 8.0 months for ECM, HSE, and LSE, respectively. **CONCLUSIONS:** CTP utilization was relatively low within outpatient wound centers. Results from this analysis indicate that health care providers are using CTPs on older, more difficult-to-heal DFUs.

PMD11

EPIDEMIOLOGY OF ADVANCED THERAPIES FOR THE TREATMENT OF DIABETIC FOOT ULCERS IN OUTPATIENT CARE SETTINGS

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OBJECTIVES: Identify patient and clinical characteristics in the DFU population and examine patterns of hyperbaric oxygen therapy (HBOT), negative pressure wound therapy (NPWT), and becaplermin gel utilization. **METHODS:** Retrospective, de-identified electronic medical records from 2007-2013 were extracted from the Intellicure Limited Data Set (I-LDS). The I-LDS extracts records from 96 hospital-based outpatient wound centers. Patient, wound and encounter level characteristics were examined. Utilization of advanced therapies including HBOT, NPWT, and becaplermin gel were analyzed. **RESULTS:** A total of 10,359 patients, 21,677 wounds, and 222,861 encounters for DFU were identified. The majority of patients was male (60.9%), Caucasian (63.5%), and reported Medicare as their primary insurance (51.1%). The average age was 63.9 (SD=13.5) and the average number of evaluation and management visits was 21.9 (SD=26.9). Mean wound surface area was 5.6 cm2 (SD=27.3). Of the 10,359 patients, approximately 28.2% received HBOT, 16.0% received NPWT, and 4.1% received becaplermin gel. Average number of HBOT visits was 31.7 (SD=24.9) and 1.2 (SD=0.6) episodes for NPWT. The average number of becaplermin days was 81.7 (SD=113.2). Of the 21,677 wounds, the overall average wound treatment time was 3.4 months (SD=8.4). The reported risk of amputation was lower in wounds treated with becaplermin (3.3%) compared to the overall population (5.3%), problems treated with NPWT (5.6%) and HBOT (9.8%), respectively. Wounds treated with becaplermin were more likely to heal (46.3%) relative to the overall population (41.1%), problems treated with NPWT (27.5%) and HBOT (32.2%), respectively. **CONCLUSIONS:** Advanced therapy utilization varied within outpatient wound centers. Results from this analysis indicate that health care providers are using advanced therapies on difficult-to-heal DFUs.

PMD12

EXAMINATION OF INTERVAL INCIDENCE OF COLORECTAL CANCER (CRC) AT SUBSEQUENT COLONOSCOPY OVER TIME: POPULATION-BASED RETROSPECTIVE COHORT STUDY

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OBJECTIVES: Evidence for surveillance intervals of colonoscopy are primarily based on adenoma recurrence rather than on CRC incidence. Current evidence suggests that due to the overuse of surveillance colonoscopy among low-risk patients and the underuse among high-risk patients the recommended surveillance intervals may need adjustment. This study aims to tailor surveillance intervals by estimating incidence of CRC at subsequent colonoscopy under diverse circumstances. **METHODS:** A population-based, retrospective cohort study of patients with a colonoscopy between January 2010 and March 2014 were identified in a well-administrated database of colonoscopy screening and surveillance. The data includes patient demographics, family history of CRC, and the pathology result (including date) of previous and current colonoscopies. Adjusted Weibull regression models estimated the incidence rate of CRC at subsequent colonoscopy given any proper interval and risk (level and coexisting). Levels of risk for patients without CRC, based on baseline colonoscopy, were: High Risk (≥3, large or advanced adenoma), Medium risk and Low risk (no polyp). Coexisting risk was defined by a combination of two the three levels: **A**) an incomplete polyp removal, **B**) a ≥3 adenoma at last colonoscopy, **C**) a personal history of CRC. **RESULTS:** Among total 27,325 patients, the prevalence of CRC at baseline colonoscopy was 8.2% for the patients with follow-up. The benchmark risk was determined by the overall interval incidence of CRC (0.33%) for low risk patients. Men and women with high risk or CRC history exceeded this benchmark in approximately 5 and 10